

### Abstract

A system, method, and program code are given for secure communication. Multiple geographic cells are arranged in a hierarchical tree having a root node and internal nodes.

- 5    The root node and each internal node in the tree have an associated node cryptographic key for secure communication with lower nodes in the tree. Each cell is associated with a leaf node of the tree and a cell cryptographic key for secure communications with devices located within the cell.
- 10   A key management center is at the root node for determining an anticipated cell path of a mobile device from a current cell to a destination cell. The key management center distributes to the mobile device a set of cryptographic keys from the tree. This set contains a minimum number of
- 15   cryptographic keys necessary to permit secure communications for the mobile device within each cell along the anticipated cell path, but no other cells.

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